

WHAT IS CLAIMED IS:

1. A shape memory alloy comprising Co, Ni and Al, wherein said shape memory alloy has a two-phase structure comprising a  $\beta$ -phase having a B2 structure and a  $\gamma$ -phase having an fcc structure, at least 40% by area of crystal grain boundaries of said  $\beta$ -phase being occupied by said  $\gamma$ -phase.
2. The shape memory alloy according to claim 1, wherein 45 to 80% by area of said crystal grain boundaries of said  $\beta$ -phase are occupied by said  $\gamma$ -phase.
3. The shape memory alloy according to claim 1, wherein the fraction of said  $\gamma$ -phase volume in said shape memory alloy is 5 to 50% by volume.
4. The shape memory alloy according to claim 2, wherein the fraction of said  $\gamma$ -phase volume in said shape memory alloy is 5 to 50% by volume.
5. The shape memory alloy according to claim 1, comprising 20 to 50 atomic % of Co and 22 to 30 atomic % of Al.
6. The shape memory alloy according to claim 2, comprising 20 to 50 atomic % of Co and 22 to 30 atomic % of Al.
7. The shape memory alloy according to claim 3, comprising 20 to 50 atomic % of Co and 22 to 30 atomic % of Al.
8. A method for producing a shape memory alloy comprising Co, Ni and Al with a two-phase structure comprising a  $\beta$ -phase having a B2 structure and a  $\gamma$ -phase having an fcc structure; at least 40% by area of crystal grain boundaries of said  $\beta$ -phase being occupied by said  $\gamma$ -phase; said method comprising a first heat treatment step comprising heating at 1200 to 1350°C for 0.1 to 50 hours and cooling at 0.1 to 1000°C/minute, and a second heat treatment step comprising heating at 1000 to 1320°C for 0.1 to 50 hours and cooling at 10 to 10000°C/minute.